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DISEASES OF THE NERVOUS SYSTEM

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DISEASES of the NERVOUS SYSTEM
(PUBLISHED MONTHLY)

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

Traumatic Intracranial Hemorrhage

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In this paper we shall be concerned entirely with closed cranial injuries. Compound wounds of the skull present so many problems of their own that they should be considered entirely separately. Closed cranial injuries can be divided into three principal classes, those which are fatal regardless of treatment, those relatively mild injuries which recover with adequate rest and careful observation regardless of the other details of treatment, and lastly that group of cases in which intracranial hemorrhage arises to complicate the picture. It is for the purpose of recognizing this latter group that careful and continuous observation of all cases of cranial injury is so important. It is in this group of intracranial hemorrhage that active intervention is so important, producing such definite results and often saving the life of the patient.

Traumatic intracranial hemorrhages may be further divided into three groups: (a) subarachnoid hemorrhage; (b) subdural hemorrhage, and (c) extradural hemorrhage.

Subarachnoid Hemorrhage

The subarachnoid space is that space which lies between the arachnoid membrane on the outside and the pia mater and surface of the brain on the inside. It is filled with the cerebrospinal fluid. As the arachnoid membrane contains practically no vessels, it is obvious that bleeding into the subarachnoid space must come from the vessels in the pia mater. As the pia mater and the vessels within it are so closely adherent to the surface of the brain, bleeding from these vessels is almost always associated with laceration of the cerebral cortex. Thus a subarachnoid hemorrhage is of itself *prima facie* evidence of cerebral laceration.

Blood extravasated into the subarachnoid space of necessity is immediately mixed with and diluted by the cerebrospinal fluid. The blood is, therefore, very quickly distributed throughout the subarachnoid space, over the surface of the brain and the spinal cord.

The symptoms which arise from such a hemorrhage are in a large measure directly related to this widespread distribution of the blood. However, as fresh blood is much less irritating than old disintegrating blood, the symptoms which arise from blood in the subarachnoid space are usually not apparent for twenty-four to thirty-six hours. During that period of time the red blood cells have broken down and discharged their content into the spinal fluid. This increases the protein content of the fluid and causes marked irritation of the meninges. The symptoms which arise are those of meningeal irritation and in fact,

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the condition might very accurately be compared to a sterile meningitis. These patients complain bitterly of headache. They have alternating periods of irritability and stupor. Persistent nausea and repeated vomiting are apt to be particularly aggravating in such cases. The temperature is usually elevated, although seldom above 101° or 102° F. Examination will reveal rather marked stiffness of the neck and a mildly positive Kernig's sign.

The diagnosis in such cases is relatively easy if the condition is only borne in mind and the treatment is equally simple and effective. Usually all that is required to relieve these patients of the major part of their complaints and make them comfortable is to perform a lumbar puncture and remove a reasonable amount of spinal fluid. The question is frequently raised as to how much fluid should be removed. In these cases that does not seem to be a matter of great moment. It has, however, been my practice to lower the intraspinal pressure approximately fifty per cent. This should be done slowly. No one has as yet offered any reasonable explanation as to why removal of this small quantity of bloody cerebrospinal fluid should be such an effective form of treatment. Obviously, the removal of this small quantity of fluid does not remove all the blood from the subarachnoid space, nor is it possible to do so. Yet, the effects of such treatment are among the most gratifying and dramatic that one will encounter in the practice of medicine. In many cases a single lumbar puncture is all that is necessary. In other instances repeated drainage may be required. As the treatment is purely symptomatic, one will be guided in this matter entirely by the patient's condition.

Subdural Hematoma

The subdural space is normally non-existent and is under such circumstances only a potential space. It lies between the arachnoid membrane on the inside and the dura mater externally. In the normal individual these two membranes are in contact, but as there are no connections between them, they are readily separable. There are practically no vessels in the inner surface of the dura mater or in the arachnoid membrane except for the large cortical veins which pass from the cerebral hemisphere to the superior longitudinal sinus. These veins are of large caliber and thin walled. They are supported, as they pass in the subdural space, only by a thin sheath of arachnoid membrane. As any neurological surgeon is well aware, these mobile veins tear very easily at their point of attachment to the rigid dura mater, and when a tear occurs at this point the bleeding is of necessity into the subdural space. In the vast majority of subdural hematomas the bleeding occurs at this point. Occasionally, however, injury may lacerate the arachnoid membrane and the surface of the brain so extensively that bleeding from the torn cortical vessels is into the subdural space rather than into the subarachnoid space, as is usual in this case.

Subdural hematomas are most often chronic, the symptoms arising slowly over weeks of time. Rarely acute and subacute subdural hematomas may be encountered. With the acute subdural hemorrhages many of the cortical veins are severely lacerated, causing a massive extravasation of blood into this space. In such instances a deep coma develops in a relatively short period of time and death occurs at most within a few hours regardless of treatment. With the subacute hematomas the symptoms develop within the course of a few days. The following is a typical example:

Case 1—H. C. R., a dentist, 40 years of age, was referred by Dr. Albert Zrunek of Chicago. The patient was a victim of severe chronic alcoholism. On the evening of March 3, 1941, he went to his home and fell down the cellar stairs, striking his head on the concrete floor. He sustained a laceration of the scalp in the right temporal region. About noon of the following day, March 4, he came to his laboratory and worked there that afternoon. He complained of a mild headache and was slightly drowsy. On the morning of March 5 he seemed to be all right, but that afternoon his speech was thick and hesitant, he had difficulty writing down telephone numbers and he complained of headache. On the morning of March 6, he was unable to talk, he had difficulty in using his right hand, he vomited once. On examination there was a right lower facial weakness, the tendon reflexes were slightly more active on the right side, the right abdominal reflexes were diminished. Babinski sign was present on the right side. The blood pressure was 180/90, the pulse 96, the respiration 24, and the temperature 102° F. He was immediately admitted to the Chicago

Memorial Hospital. Roentgenograms disclosed a linear fracture of the right parietal bone. The Wassermann test and all other examinations of the blood were negative.

A diagnosis of an intracranial hemorrhage on the left side was made, in spite of the obvious injuries to the right side of the skull and scalp. A trepanation was made in the left temporal region. A large coagulated subdural hematoma of recent origin was found covering the entire left temporal lobe. After it was removed it was seen that the bleeding had arisen from an extensive contusion and laceration of the cerebral cortex in this region. His condition rapidly improved and he left the hospital practically completely recovered seventeen days later.

The majority of subdural collections of blood are of much more chronic nature. Although they may follow severe cranial injuries, they commonly develop after what originally appeared to be a most trivial one. Furthermore, although they may occur in an individual of any age, they are more likely to appear in the very young and those well past middle age. The following is a typical example:

Case 2—A. R. H., a lawyer, 71 years of age, was referred by Dr. C. H. Drenckhahn of Urbana, Illinois. He was a vigorous active man prior to a trivial injury on the evening of February 10, 1941. While bathing before dinner he slipped in the bathtub and fell, striking his right cheek. He was not unconscious and although the local injury was painful, he dressed and attended a banquet that evening. Headaches appeared shortly and gradually increased in severity. He developed dizziness and his gait became so uncertain that his sobriety was questioned. Repeated and extensive examinations, both physical and laboratory, revealed nothing abnormal. On April 3, approximately seven and a half weeks after the original injury, he became lethargic. The following day he had difficulty in speaking and developed weakness of his right arm and leg. On the morning of April 5, he was comatose. I first saw him at 4 P. M. that day.

The temperature, pulse and respirations were normal. The blood pressure was 95/60. He was deeply comatose. The optic disks were normal. The right pupil was dilated; neither reacted to light. No difference in reflexes could be detected and he did not respond to painful stimuli. A lumbar puncture had previously been performed; the pressure and fluid were normal.

On the basis of the history alone a diagnosis of a left subdural hematoma was made. He was operated upon at 5:30 P. M. that day. On opening the dura mater a membrane about two millimeters thick was exposed. It was readily separable from the dura mater. When it was opened a large quantity of dark reddish brown fluid was evacuated. The cavity was thoroughly irrigated with normal saline and then drained. He made a rapid recovery from this critical state and has long since been engaged actively in his professional duties.

It is not to be supposed that the diagnosis can always be so readily and certainly made as in the above case. In many instances the trauma which resulted in the bleeding was so trivial that the patient had forgotten it or failed to mention it to his family and associates. Recently I encountered two more obscure subdural hematomas. Both patients were comatose and the families knew of no cranial injury whatsoever. After the patients had recovered, however, we were able to elicit the history from them. One, a butcher, related that he had recently raised up under a meat hook, striking his head. In the other case, the patient had been riding his daughter's bicycle approximately a month prior to the onset of his symptoms and had been accidentally thrown over the handlebars onto the sidewalk.

Furthermore, the symptoms of cerebral compression, either localized or generalized, are by no means always definite. Subdural hemorrhages are one of the most common complications of cranial injuries and the possibility of their existence must always be borne in mind. In any case of cerebral trauma where the patient appears to be developing a progression of symptoms, where the state of consciousness is being gradually impaired, where a progressive hemiplegia or other evidence of local cerebral damage appears, the possibility of a subdural hematoma must be strongly considered. In every instance where there is any likelihood of such a diagnosis, bilateral trephine openings should be made in the upper temporal regions. This procedure can be carried out under local anesthesia. It is so simple and so innocuous that there should never be any hesitancy about its performance.

Unlike the acute and subacute subdural hematomas, chronic subdural hematomas do not represent simply the extravasation of blood into the subdural space. It is obvious to any one who has seen the dirty chocolate colored fluid which fills one of these cystic cavities, that we are dealing here with degenerated and diluted blood. Furthermore, it is unreasonable to suppose that continuous and progressive bleeding would occur over weeks and months of time, and yet we know that the symptoms grow progressively worse over such long periods. The investigations of Gardner and others have clearly demonstrated the pathogenesis of these lesions. At the time of the injury there is a relatively small amount of bleeding from the cortical veins into the subdural space, so little, in fact, that there may be no symptoms at all at that time. But blood once released into the subdural space has no avenue of escape; it remains there and gradually disintegrates. As the red blood cells break down they discharge their contents into the plasma and furthermore, the large protein molecules break down into smaller ones, and thus the osmotic tension is steadily increased. This hypertonic fluid is separated from the cerebronspinal fluid only by the thin arachnoid membrane. As a result, the spinal fluid is drawn through the arachnoid membrane by this hypertonic fluid and thus gradually dilutes the disintegrated blood and increases its volume. As this increase in volume progresses, there is steadily increasing compression of the brain and with it a steady increase in the symptomatology.

The treatment of all subdural hematomas, as we have already indicated, is surgical evacuation. With the solid coagulated hematomas it is usually necessary to make a rather large trepanation in order that the clot may be removed. With the chronic cystic subdural hematomas, small trephine openings are usually all that are required. Through them the disintegrated blood can all be washed out and the condition relieved.

Extradural Hematomas

Older teaching and many of the textbooks would lead one to believe that extradural hematomas are more prevalent than subdural ones. As a matter of fact, exactly the reverse is the case. Extradural hematomas are relatively rare. They usually arise from laceration of the middle meningeal artery by a fracture through the squama of the temporal bone. Far less commonly, extradural hematomas arise from an external tear in one of the large dural sinuses, and on one occasion I saw a large extradural hematoma in a child where the bleeding had come from the diploic vessels. In the majority of instances the classical picture presented by the textbooks is typical of cases of extradural hematoma. The individual is injured and immediately rendered unconscious as a result of concussion. This state persists for only a short time, however, and he regains consciousness. Gradually he lapses back into lethargy and then stupor and if the condition is unrelieved, coma and death result. Because the bleeding is arterial in the majority of these cases the progression of symptoms is much more rapid than with the subdural hematomas. In the more severe cases the time from accident to deep coma may be a matter of only two or three hours and in most cases not more than twenty-four to thirty-six hours elapse. The impaired state of consciousness is the most important manifestation of these hemorrhages, although in many instances the pupil may be dilated on the side of the hemorrhage and there may be weakness of the opposite arm and leg. The following is a typical example:

Case 3—A. H., a girl, eight years of age, was referred by Dr. H. L. Faulkner of Chicago. On January 12, 1942, in the afternoon, she had been struck by a truck and knocked unconscious. She was taken to a nearby hospital. On reaching there she had recovered consciousness. Examination revealed only some apparently slight contusion about the left elbow and roentgenograms of both the skull and the left elbow were said to be normal. She was taken home. The following morning the family physician was called to see the patient because of persistent pain in the left elbow. He found a fracture of the olecranon process and treated it appropriately. The child seemed to be all right otherwise. That afternoon at four o'clock the child became lethargic. The mother called the family physician, who was unable to come at that time and reassured her. By 6 P. M. the child was stuporous. Dr. Faulkner was called. He not only found the child to be stuporous but, in addition, the left pupil was enlarged and there was definite weakness of the right extremities

with reflex alterations. He recognized that the child was suffering from an extradural hemorrhage and as soon as possible the child was admitted to the Chicago Memorial Hospital under my care.

Under local anesthesia an incision and trepanation were made in the left temporal region. A linear fracture was found in the squama of the temporal bone and immediately beneath it the middle meningeal artery was torn and the lacerated vessel was spurting into a large extradural hematoma. The bleeding vessel was coagulated and controlled, the hematoma was evacuated. The child made a prompt recovery and left the hospital twelve days later, on January 25. She has remained well since.

In the above case, as in almost all other instances of extradural hemorrhage, prompt surgical intervention is of the utmost importance if a tragedy is to be avoided. In this instance the weakness of the right extremities was sufficient to tell us that in all probability the extradural hematoma was on the left side. That is not always the case. Not infrequently the localizing neurological signs are trivial or even absent, and then we must rely on other evidence to lateralize the hematoma. This is one of a few instances in which an x-ray picture of the skull in traumatic cases is of value. These hematomas are almost always associated with a fracture of the temporal bone and a roentgenological examination will, therefore, tell you which side is involved. It is true in the present case that the fracture was overlooked due to poor technic, but of course that need not be the case. Frequently, the injury in the temporal region is associated with edema and swelling in the temporal region on the involved side. In such instances the demonstration of the edema will point clearly toward the side which is involved. At times the bleeding is from the posterior branch of the middle meningeal artery or even from the lateral sinus. In such cases the hematoma lies far back in the temporal region toward the occipital pole. When one fails to disclose the hematoma in the temporal fossa, the exploration should always be extended posteriorly.

Conclusions

The most frequent and important complications of closed cranial injuries are intracranial hemorrhages. These traumatic intracranial hemorrhages are divisible on an anatomical basis into three groups: the subarachnoid, the subdural and the extradural.

Subarachnoid hemorrhages present the symptomatology of a sterile meningitis, with headache, irritability, stupor, nausea, vomiting, fever and stiffness of the neck. The symptoms are promptly relieved by single or repeated lumbar puncture.

Subdural hematomas may be acute, subacute or chronic. The symptoms which they produce are those of generalized and localized cerebral compression. Their recognition is often extremely difficult. They should be suspected in all cases of cranial injury where progressive lethargy, stupor and coma appear, or where there is a progressive hemiplegia or other evidence of localized cerebral compression. In all instances in which they are suspected, bilateral trepanation of the skull should be immediately undertaken.

Extradural hematomas are almost always acute. They arise from laceration most commonly of the middle meningeal artery, occasionally of the dural sinuses. The symptoms which they produce are those of generalized and localized cerebral compression. The diagnosis of such a lesion is the indication for immediate surgical intervention.

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Folie a Trois: Case Report*

RICHARD DE MONBRUN KEPNER, M.D.**
Kaneohe, Oahu, Hawaii

Comparatively few instances of folie a trois have been reported in the literature. Brussel,[1] in reviewing the literature from 1900 to 1937, found only two papers on that subject. Since that time, Hays[3] has contributed one other paper on folie a trois, and Soniat and Smith[2] one paper on folie a cinq. In the same period[1] there were reported only fifty-four cases of folie a deux. Nearly all of these have been cases suffering from a paranoid type of mental disorder. It seems worthwhile, therefore, to report an instance of folie a trois which came under the author's care a few years ago in which two sisters and a brother all developed manic-depressive psychoses—all being admitted to this hospital within two months of each other, and all recovering.

Hays[4] writes, "As far as I am able to determine from my experience and reading, the only form of mental disease which is capable of transmission from one person to another is that of a paranoid type." On the other hand, Henderson & Gillespie[5] state: "Suggestibility plays a part among other factors in the genesis of folie a deux or communicated insanity, which is the term applied when two persons closely associated with one another suffer a psychosis simultaneously, and one member of the pair appears to have influenced the other. The condition is not, of course, necessarily confined to two persons and may involve three or even more (folie a trois, etc.). It is commonest in persons living secluded lives. Husband and wife, brother and sister, or parent and child, or friends of the same sex living closely together are the usual subjects of the condition. It is usually either a paranoid or manic-depressive state." Bleuler[6] also states that hypomanic patients may rarely be the victims of induced insanity. Gerty and Hall[7] report a case of folie a trois in which all three psychoses were of the affective variety.

Tuke[8] points out that we have no good corresponding English term for folie a deux, and that the term "communicated insanity" does not include those cases in which the disorder is not, strictly speaking, communicated, and which the French do include in folie a deux.

The four varieties of folie a deux usually described are as follows:[9]

1) Folie imposée (Lasegue and Falret[10]) consists of a mental disorder in which one psychotic person imposes his delusional convictions on a sane individual who is, intellectually and morally, a weaker person. It has been said that if the pair is separated, the receptor tends to discard the beliefs of the stronger personality (the inductor).

2) Folie simultanée (Regis[11]) is characterized by the simultaneous appearance of a delusion, by reciprocal influence, in predisposed associated individuals.

3) Folie communiquée (Marandon de Montwel[12]) is the condition in which the receptor accepts the delusional ideas of the inductor only after prolonged resistance, and in which psychosis persists even after the patients have been separated.

4) Folie induite (Lehmann[13]) consists of the addition of new delusions to an existing psychosis as a result of association with other patients.

In the opinion of some writers, the above divisions are unnecessary and do not allow for certain other types which are mentioned by Halberstad.[14] Halberstad states that simultaneous insanity must be differentiated from insanity from contagion in estimating the value of some etiologic factors. He thinks that inheritance of the psychosis, which is relatively frequent, explains the identical evolution of the psychic sense of some members of the same family. Halberstad divides cases in which direct contagion is probable, into two categories: (1) one psychosis provokes another without resemblance; (2) one psychosis provokes another similar, both as to symptoms and evolutions, but of different intensity.

It is probable that the instance of folie a trois reported in this paper partakes of the nature of both categories inasmuch as there are elements of both similarity and dissimilarity in the psychoses of the three siblings.

Patient No. 1: S. R., a Japanese woman of twenty-six, married, literate, with two children, nine and seven, was the first of these

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three siblings to develop a mental disorder. Her past and family history was essentially negative except for the details of her mental illness. The patient's mother was dead, but the father lived nearby. Three siblings were well; other siblings are described herein. Her husband worked for a sales company and earned $40 per month on which he supported the family.

According to her husband, her first attack of mental illness had occurred in 1925 and she had recovered from this attack in about a month without medical attention. Her second attack had come on about 1931 when she was much worried and had lost much sleep caring for her father-in-law who was ill at that time. The third attack began on December 31, 1935, when she had allegedly been arrested for violating laws regarding alcohol and had started doing a great deal of worrying. She was menstruating at the time, and it was thought that that had contributed to her upset. She had taken an intense dislike to her husband and left him to go to the home of her brother, O. C., of whom more will be heard later in this paper. On January 5, 1936, she was very badly disturbed but became more quiet until February 26, 1936, on which date she again became violent. She was noisy, didn't sleep, didn't eat, remained naked in her room, and refused to put on any clothes.

She was committed to the Territorial Hospital on March 4, 1936. On admission to this hospital, she was undernourished, hyperactive, flighty, incoherent, irrational, quarrelsome with other patients. A note made by the examining physician March 9, 1936, read: "An emaciated and undernourished Japanese female, lying restlessly on couch, talking continually, irrational, uncooperative, noisy, flighty, incoherent, delusional, and hallucinatory, with misidentification of attendants and doctors. Quarrelsome with other patients. Great motor excitement and emotional irritability. One day she is perfectly normal, orderly and cooperative, and the next day she becomes noisy, disturbed, and talkative. She is emotionally unstable and recognizes people at the time of lucidity. Disoriented with little insight. Physically, essentially negative." Laboratory examinations, including Wassermann, Kahn, blood count, hemoglobin, and urinalysis, were all within normal limits. Stool examination showed ova of trichuris trichiura which were thought not to be of any significance. The diagnosis in this case was manic-depressive psychosis, manic type.

The patient continued to be badly disturbed in spite of sedatives and hydrotherapy and had to be transferred to a disturbed ward on March 19. Her sister, F. R., was in another disturbed ward, but it was thought better to separate the two. Patient was given sedation and four-hour packs daily over a period of a month, March 25 to April 26, when she was transferred to a convalescent ward where she received daily hydrotherapy until June 6. In the meantime numerous psychotherapeutic interviews were conducted by the author and others.

On June 22, 1936, she was discharged in splendid condition with good insight, and gain in weight, arrangements having been made to get her a job in Honolulu instead of sending her back to her old home where her troubles had arisen. She felt badly about the whole business, blaming herself for the predicament of the others who had become mentally ill while caring for her. She wrote a letter to each of the members of the medical staff of this hospital after her return home, thanking them for her care during her illness.

Patient No. 2: The next sibling to become mentally ill was O. C., a Japanese man of twenty-six, employed as solicitor for a trust company. He was a twin of S. R. and looked exactly like her except for the sex difference. He was a graduate in accountancy from the university. His religion was Buddhism. He drank in moderation. He lived by himself on what he earned. He had no savings.

In January, 1936, he went to assist his sister F. R. in caring for their sister S. R., didn't get any sleep, and was unduly worried and sympathetic about the whole situation. After about a week he became very violent and was treated by several physicians. He recovered from this spell of violence in about fifteen days and, although his brother wished to take him back to Japan on a trip, he returned to work at once. That was around February 1. Near the end of February, the store in which he worked was closed by creditors, and the owner asked O. C. to work every night to attempt to collect all that was due the store. About March 2 he again became violent but in twenty-four hours quieted down and appeared rational. Within forty-eight hours he had still another attack

and was committed to the Territorial Hospital on March 4, 1936, the same day as his sister S. R.

Examination by the admitting physician March 9, 1936, showed the patient to be in excellent physical condition, well-developed and nourished. He noted: "Patient is uncooperative, answers questions unsatisfactorily. Since admission he has been extremely hyperactive. Patient is totally distracted, speaking incessantly to himself in a rhyming monotone. His consciousness is somewhat clouded, and he is apparently disorientated. He mumbles ideas of many and varied subjects in rapid succession. He is restless, hyperactive, agitated, waving arms about, tossing his head from side to side, grimacing, tearing at his clothing, howling, yelling, laughing boisterously, irritable, showing bursts of anger for no reason at all. Patient shows violent, resistive, combative, and shows enormous physical strength for his size. He is untidy, eats poorly because he is too busy talking to himself. He sleeps poorly for the same reason. In spite of medication and hydrotherapy treatments, the patient has not quieted down since admission. Patient has also a twin sister in this institution, and an older sister, both of whom are also hyperexcitable. Patient is both delusional and hallucinatory." (The author questioned the presence of hallucinations in this case.) Laboratory examinations, including Wassermann and Kahn, blood count, hemoglobin, urine, and stool, were all negative. The diagnosis in this case was manic-depressive psychosis, manic type.

In spite of sedation and hydrotherapy, patient became emaciated so rapidly that he was soon returned to the hospital ward for special care and feeding. On April 20, 1936, he was transferred to a convalescent ward, and on May 17 he was discharged as recovered, with excellent insight, having gained weight, and having become a splendid worker about the x-ray room. Numerous psychotherapeutic interviews were conducted by the author in this case also. O. C. also wrote after his discharge, thanking the staff for their kindness. He was observed subsequently in October, 1937, because his employer desired a certificate of sanity from us. At that time he was in splendid shape physically and mentally, and had suffered no disturbance, even following an automobile wreck one month before.

Patient No. 3: F. R. was apparently the last of the three siblings to become mentally ill. She was a Japanese woman of thirty-two, born in the Territory, housewife, living with her husband and fourteen-year-old son. Husband was employed as a laborer by a plantation at $1.55 per day. They had saved some $600 from his crops.

She also had been taking care of her sister S. R., who was mentally ill, had got insufficient sleep, and had become ill as a result thereof. It was noted that she had complained of a pain in her leg since June, 1935, the cause for which was not determined; but she had displayed no mental symptoms until about January 10, 1936, when she began to act queerly, prayed, yelled, and pounded on the table. Interestingly enough, she, like her sister S. R., developed an aversion to her husband and other members of her family. She had talked constantly about the way in which she had been treated and about her people for treating her roughly when such was not the case. On January 29, 1936, the night before commitment, she attempted to stab her husband with the scissors and then to stab herself. She tried to kick and fight the family when they took her to church. She got up at night and cut her hair and said she was going to kill her son and also herself.

On admission to the hospital, January 30, 1936, she was talkative, flighty in her speech but fairly cooperative. She was confused, disorientated, rambling, and incoherent. On the whole, she was tidy and cooperative, although she was somewhat impudent at times. Examination by the author on the day of admission showed that she was somewhat slender, weighing only 105 pounds, but otherwise she seemed to be in satisfactory physical condition. The skin showed many small scars over the back from moss burns, three crusts from recent moss burns that had not been healed (this is a form of Japanese medical treatment), and some infection of the hair follicles on the legs. Her hair was cut short in places from her own actions during her disturbed episode. There was an old midline laperotomy scar from a previous sterilization and a large recent bruise across the right iliac crest and outer aspect of the thigh. The summary of the examination was: "A slender, somewhat undernourished Japanese woman of thirty-three, emotionally depressed with psychomotor ex-

citement, and increased stream of thought with almost a logorrhea. She said she became upset, and started trouble because her husband was running around with another woman, a fact which was apparently untrue. Nothing of significance was noted in the physical examination." Laboratory examinations, including Wassermann, Kahn, blood count, hemoglobin, urine, and stool, were essentially negative. The diagnosis in this case was manic-depressive psychosis, mixed type.

This patient became destructive to clothing, spat about a great deal, was restless, hyperactive, noisy, and resistive, but always rather cunning about it. On one occasion, February 27, 1936, she threw herself against the concrete wall so hard as to necessitate stitches in her forehead. At one time she became very emaciated. Treatment consisted of hydrotherapy and sedatives for four months, during which time she was in a closed ward. On June 23 she was transferred to an open ward, and on September 1, 1936, to a convalescent ward where she rapidly gained weight and developed insight into her condition. Many treatment interviews were conducted by the author and others in this case. She maintained this improvement, and was discharged October 31, 1936, to her husband. The patient's father lived a quarter of a mile away, and with the help of the two, it seemed that she would be able to adjust well. She has since written personal letters to the doctors here, thanking them for their kindness.

Comment

1) There is presented an instance of folie a trois in two sisters and a brother.

2) All patients suffered from a manic-depressive psychosis, all were committed within two months of each other, and all recovered.

3) Very few cases are reported in the literature of affective psychoses affecting three members of a family simultaneously.

4) There may be some question as to whether this case is truly one of a communicated insanity; however, there does seem to be evidence of direct contagion.

5) Although there is no family history of mental disorder, hereditary or familial taint probably played some part in the genesis of these disorders.

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Thomsen's Disease (Myotonia Congenita)

Case Report

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In view of the relative rarity of this neurological disorder, it is thought that the report of this case could be helpful, especially to the general practitioner, relative to its recognition and its understanding.

Complaint Problem—This man was recently sent by his local draft board for induction, at which station he was rejected and classified 4-F. He complained of frequent falling and oftimes injuring himself. Difficulty in disengaging himself from various postures. Inability to render quick movements.

Present Illness—As long as patient could remember, he would have frequent falls, oftimes associated with minor injury. In elementary school, when called upon to recite, he would have difficulty in immediately aris-

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ing from his seat. Likewise at the blackboard, he would have difficulty in disengaging himself. On going up stairs, he would have to pull himself on the bannister "to get going." When he would attempt any quick movement from the static position, "my legs would freeze and I'd pitch right over as though hit by something. Sometimes I might move my feet and shuffle a bit, but not fast enough to catch up with myself (center of gravity) because my legs were stiff."

"I learned that I had to do things slowly, otherwise, I'd fall. Once I broke my left arm because I tried to move quickly from the side of a bank. I fell down about twenty feet.

"If I force myself to move when I'm stiff, I strain myself, something like a charleyhorse. It takes about five to ten seconds to gradually get my muscles going."

Patient states that there is an emotional factor which aggravates the condition. For example, whenever he has attempted to play baseball or any competitive sport which required quick movements under strain of excitement, he would invariably pitch headlong, as he seemed to be "glued to the spot." Condition is also aggravated by cold weather. "Every time I'd stop last winter, I'd have difficulty in getting going again. It is hardest at the beginning of the getting-started period. After a while I get loosened up, warm and can go almost as fast as anyone. I feel best in the summer. The cold stiffens me up.

"I have to be painstaking in how I start to walk. It's necessary to start slowly and feel my way. Especially is it worse on the upgrade. If I make a sudden movement, I can't retract it."

Patient states that rigidity varies in intensity in different muscle groups. There is, however, an "all over" stiffness, but the location of maximum intensity is focused about the particular place where motion is commanded, e.g., neck, arms, back or legs. For the past four years he has been driving his car, but this requires great care as it is an effort to move his neck or body around quickly, especially in emergency situations.

At times when he is talking, he finds it necessary to swallow a few times until his voice comes back. Usually it is a matter of only a second or two before its return.

On his present job of machine operator (held past 15 months), it takes him 10 seconds to loosen up his muscles so that he can work. Then he can go almost as fast as anyone.

Sleep somewhat impaired, but six hours.

Appetite poor. The only food he is able to enjoy is milk, owing to a duodenal ulcer suffered since 1937.

He feels best in the early morning, usually reaching the peak at 10 A. M. Energy quotient then starts going down until the end of the work day. During after-work hours he states he does not feel like doing anything, owing to a tired feeling.

For the past two years he has taken a laxative (Dr. Edwards' Olive Tablet) nightly. He states that this has not been necessary and has been an unfortunate habit.

No nocturia. Occasional emission. Libido unimpaired.

Personal History—Born in New York State of Anglo-Saxon parents, oldest of four children. Birth and development within normal range. Twenty-five years old, and unmarried.

Personality—Said to be sensitive and shy, largely due to walking difficulty and inability to play as other children in games. Does not like to mix with people as he is sensitive about muscles, e.g., slowness and awkwardness in rising from meals.

Past Illnesses—Include chicken pox, scarlet fever in childhood, no sequelae. Epigastric pain and heartburn since 1937. Gastric intestinal series revealed consistent deformity of duodenal cap associated with spasm and hypermotility. Takes three quarts of milk daily, a glassful every two hours.

Until five years ago he experienced nightmares. Dreamed that the world had come to an end.

Completed elementary and high school without difficulty as far as scholastic achievement is concerned. In keeping with a one-time ambition to become a teacher, he completed two years of college. This was followed by a year in an agricultural school. However, he failed to make the grade for teacher qualification, and for the past 15 months has been engaged in defense work as a machine operator.

Sex—Usual masturbation interest from age 13 to 17. No coitus. Has never kept steady company with a girl, although on special occasions he will accompany one. No difficulty in controlling himself because of emotional factors.

Family History—Father, age 52, has suffered from a similar disorder to that of patient as long as the latter can remember. He has to watch his step or he will fall. Successful professional musician. Mother, age 45, well and free from any nervous disorder.

There are two brothers and one sister. The latter, age 23, single, suffers periodic muscle stiffness associated with occasional falling. Her condition is not as serious as that of patient. A brother, age 22, is entirely well. A brother, 19, single, also falls if he goes to move suddenly.

The paternal side of the family is positive for this disorder, the paternal grandfather, uncle and a cousin all have suffered this disorder in varying degree and for the most part of their lives.

Physical and Neurological Examination

General Observation—A well-developed, well-nourished adult single white male of 25. No cranial tenderness or abnormality. Small linear scar of forehead due to fall at age 12.

Height 71 inches. Weight 181 pounds. Normal chest expansion. Hair distribution in keeping with age and sex. Pulse 96. Blood pressure 148/86. Urinalysis normal. Heart and lungs normal.

Cranial Nerves—No olfactory complaints. Visual acuity and fields roughly normal. Extra-ocular movements normal. Pupils equal, central and circular, react to light and accommodation. Fundi normal. Corneal and intranasal sensation equally active. Perceived light touch and pin prick over distribution of trigeminal areas normally both sides. Muscle function of trigeminal nerve normal. No abnormal fatigue upon repetitious movements of eye closing or jaw movements. No abnormalities noted of VII, VIII, IX, X, XI, XII cranial nerves. Ears not examined by otoscope.

Sensory—No loss of deep or superficial sensibility made out. No astereognosis; no loss of sense of position or vibratory sense; no tenderness of spine, muscles or nerves; no pain or hyperesthesia. Romberg negative.

Motor—Gait definitely spastic, walks on a fairly wide basis, legs held quite stiff on mass with tendency to walk on balls of feet everted. When he was asked to suddenly increase the rate of walking, he pitched forward and fell but without injuring himself. No loss of strength in upper or lower extremity, nor loss of coordination providing patient had adequate time to perform motions upon command. No atrophy or fibrillations. Grips equal, right-handed, but there is retardation releasing grips upon command. Slight course tremor of extended fingers. Muscle tone markedly increased in all extremities upon sudden passive movements. With repetition of such movements the rigidity, which is somewhat irregular in maintenance, gradually passes away and movements can be made readily. Speech normal with exception of remarks made in previous history. No loss of sphincter control. Writing specimen upon command is quite irregular when rate is fast but normal when he is allowed to take his own time.

Reflexes—Tendon reflexes all active and equal with the exception of some diminution of right knee jerk. No clonus, no Hoffman. Abdominals active; plantars flexor.

Vegetative Nervous System and Endocrines—Normal with exception of professed habit of laxatives. He stated, however, that it has not been necessary for him to take pills for bowel movement. Electrical reactions not tested.

Mental Status

Attitude and General Behavior—Is cooperative, does not appear acutely ill. General mood, however, is one of considerable tension. No posture deformity. Appears quite strong.

Stream of Thought—Normal spontaneity, answers prompt and relevant.

Affect and Mood—Objectively appears worried and tense. Subjectively, "I don't feel particularly happy. I have dips of the blues which may last for days."

Content of Thought—No hallucinations or delusions. States that occasionally he will awaken during the night and feel "hysterical—on verge of letting myself go." He states this has not been present since the age of 12 and apparently is a form of nightmare.

Sensorium—Correctly orientated. No memory disorder. Counting and calculation normal, reading normal. No difficulty in thinking capacity. Average intelligence.

Diagnosis—Thomsen's disease (myotonia congenita).

Prognosis—Incurable.

Treatment—Last autumn patient was given quinine but without improvement.

No other treatments have been attempted.

Comment—A case of a rare congenital con-

dition of the voluntary muscles popularly known as Thomsen's disease is reported. The familiar hereditary feature is to be noted, both sexes being affected. Brisk voluntary movements cause a spasm which is somewhat generalized but has its maximum intensity in the muscle group where motion is in the lead. Relaxation is gradual and after a few seconds movement is more or less normal. Attempts at hurrying or stopping and starting brings about recurrence of stiffness and retardation of muscular relaxation. No obvious hypertrophy of muscles was noted, although this is oftimes to be found in this disorder. Although usually the upper limbs are more affected, in this case, the reverse was true; the lower limbs were more difficult to control. We saw that cold weather and strong emotional stimuli affected the myotonic phenomena. Sensory and reflex functions are unaffected. Although electrical reactions were not tried, in this disorder excitability to mechanical tapping, faradism and galvanism is increased. There is no family history of mental disorder, although in patient there is a definite personality introversion. From the standpoint of safety, it would be best that patient be persuaded not to drive his car, especially where traffic is to be encountered.

In this condition, there is said to be an excessive production or absence of destruction of acetyl-cholin at the myo-neural junction. There is also a relative diminution of coarse striated muscle-fiber and a relative increased proportion of slowly-relaxing non-striped sarcoplasmic muscle-fibers. The slowness of relaxation observed clinically is related to the relative preponderance of non-striped muscle-fibers. In some instances, administration of quinine has temporarily abolished and at times has prevented from recurring myotonic phenomena. It is also reported that alcohol and atropine may temporarily relieve symptoms whereas prostigmin and potassium salt aggravate the condition.

218 State Street.

A Review of Fifteen Years of Malaria and Chemotherapy Treatment at the Pontiac State Hospital

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Within this paper are reviewed the results of treatment given at the Pontiac State Hospital during the past fifteen years (January 1926-January 1941) to two hundred and fifty-three patients who were diagnosed as dementia paralytica, also called general paralysis of the insane. During this period the method of treatment used has been standard and the results therefrom should be of some significance.

The routine followed at the Pontiac State Hospital consisted of both pyretotherapy and chemotherapy. The method of pyretotherapy used was malaria, the benign tertian type caused by the Plasmodium Vivax. The chemotherapy consisted of intravenous injections of tryparsamide, intramuscular injections of bismuth and potassium iodide given orally.

Malaria therapy was first introduced for the treatment of general paresis by Wagner von Jauregg in 1917. He inoculated nine cases of general paresis with tertian malaria. His published reports revealed that after a period of ten years, three had remissions, two showed no improvement, and one patient died during the fever period. Later Wagner Jauregg substantiated these results by reporting other series of cases treated with malaria. Following this, many authors reported series of cases treated with malaria. The first report made in the United States was in 1924 by Lewis from St. Elizabeth Hospital.

As one reviews the literature the amazing fact is not that malaria was discovered as a form of treatment but that some form of hyperpyrexia had not been tried more thoroughly years before. Driver and Karnosh[1] state that in 1848 Koster recognized the beneficial results of malaria on mental diseases and suggested that an asylum be built in a

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malarial district. Clarence Neyman[2] gives an excellent review of the history of artificial fever. Some of the highlights of this review are that in the sixteenth century syphilis was treated by various forms of heat such as using heavy blankets, steam cabinets and hot baths. This form of treatment was used both with and without drugs. The popular drug used at that time was mercury. Other authors who were reported to have used heat in the treatment of syphilis were Montpellier of France in 1872 and Kalachnikoff in 1887. Montpellier used stove heated rooms. Kalachnikoff used hot baths when the lesions were found in the extremities and if the lesions were found on other pars of the body, he used hot fomentations and hot water bottles. Kalachnikoff also noted that these lesions cleared more quickly with the heat alone than with mercury alone. He observed that heat plus mercury gave the best results.

As early as the eighteenth century physicians recognized the advantages of fever therapy in the treatment of paretic and psychotic patients. At this time physicians of both Germany and France reported cases that showed improvement when treated with fever caused by suppuration. They produced suppuration by running horse hair through the skin and pulling it back and forth until an abscess formed. McIntyre[3] reports that E. Meyer in 1887 produced suppuration by rubbing Autenreiths ointment in the scalp. Neyman and McIntyre both report the work of Rozenblum who in 1876 purposely infected psychotic and demented patients with relapsing fever. Neyman goes on to state that Rozenblum also noticed the fact that malaria produced remissions in mental disease. A study of his original article makes it clear that many of the patients who recovered were afflicted with dementia paralytica. It is regrettable that Rozenblum did not possess the diagnostic ability of Haslam, Esquirol or Bayle. Had this been the case, the world would not have had to wait until 1918 for a solution of the problem by use of malarial inoculation. The use of relapsing fever was revived in 1920 by Muklens, Weygandt, Kirschbaum, Plant, and Steiner. The disadvantage of this type of therapy is that it cannot be controlled as easily as malaria.

Kunde, Hall and Gerty[4] in 1927 reported upon the use of typhoid vaccine for the production of therapeutic pyrexia in paresis.

Other forms of treatment that have been tried are tuberculin, sterile milk, sodium mucleinate and suspension of sulphur in oil.

Neyman advocated the use of electropyrexia and his work has been quite influential in recent years.

The most common forms of pyretotherapy used today are malaria, electropyrexia and typhoid vaccine. Malaria has been the most popular, but more recent reports are beginning to extoll the advantages of electropyrexia. Although the advantages and disadvantages of various forms of pyretotherapy is a controversial subject, it is safe to say that most clinics are using malaria.

Since Wagner von Jauregg first reported his results of nine cases of general paralysis treated with malaria many articles have been written trying to prove or disprove his results and many workers have also tried to show how different forms of treatment have advantages over malaria therapy.

Yule[6] in 1931 reported that it was too early to consider general paresis as a curable condition, for he saw that, even in what was termed the best of remissions, a definite change in personality was always noted.

Robards and Tate[7] feel that tertian malaria by direct injection of the blood from an infected person is probably the most satisfactory form of fever therapy. They also claim that malaria should be used in institutions only. They advocate the use of chemotherapy, tryparsamide, mercury and bismuth, in conjunction with malaria. Of 210 cases treated with 20 to 150 doses of tryparsamide only one showed disturbance of the optic nerve and this was later diagnosed primary optic atrophy. They found no evidence of cumulative toxic effects from tryparsamide. Of 182 patients treated with malaria and chemotherapy they reported 28 per cent showed decided improvement, 25 per cent moderate improvement, 14 per cent no improvement, and 33 per cent died.

Kusch[8] inoculated 363 patients with malaria parasites (tertian type) followed this with twelve injections of tryparsamide and twenty injections of bismuth. He had seventy or 19 per cent remissions, one hundred thirty or 36 per cent improved, one hundred thirty-seven or 37½ per cent improved, and twenty-six or 7½ per cent died.

Later in another paper Kusch[9] concluded first that the course of vivax (tertian) malaria is milder when induced through mosquito bites than induced by blood inoculations and is therebore borne better by the patient. Second, that malaria induced by the mosquito bite for treatment of general paresis apparently gives better results than that produced by direct blood inoculation. He also believes that this is the treatment of choice where facilities for its use are available.

Hinsie and Blaloek[10] reported twenty-two cases of general paresis six months after treatment with combined electropyrexia and tryparsamide. Of twenty-two patients treated fourteen or 64 per cent benefited by the treatment, six patients or 27.3 per cent had clinical remissions. He also reported that out of thirty cases treated eight failed to take the full course, seven had to be stopped because of their reaction to febrile therapy. Three of the seven developed severe burns; one developed persistent vomiting and diarrhea; two showed inability to meet the "heat load."

Levin[11] treated one hundred paretics with malaria alone and one hundred with malaria followed by one or more courses of tryparsamide. He found that of those who had no tryparsamide 26 per cent had complete remissions, 10 per cent partial remissions, 14 per cent improved, 21 per cent unimproved, and 29 per cent died. Those who had tryparsamide 27 per cent had complete remissions, 27 per cent partial remissions, 18 per cent improved, 9 per cent unimproved, and 18 per cent died. Levin believes that following malaria with but one or two courses of tryparsamide is inadequate and that giving thirty or forty injections of tryparsamide will bring about a more favorable result.

Hutchings[12] divided his treatments into four groups and had the followings results:

1) Malaria only: Sixty-five treated, thirty-five or 54 per cent were discharged, five remained in the hospital and twenty-five died within the nine year period studied.

2) Other treatment followed by malaria: Forty out of seventy-six or 52 per cent were discharged, twenty-two remained in hospital, four died.

3) Malaria followed by other treatment: Ten out of twenty-three patients or 43 per cent were discharged.

4) Malaria both preceded and followed by other treatment: Six out of eighteen or 33 per cent were discharged.

Hutchings points out that as soon as patients showed improvement they were discharged but as long as they were detained in the hospital they were given treatment. This explains why the group having most treatment showed poorest results.

Wile and Hand[13] reported one hundred and eighty-two cases of paresis treated with malaria. His results showed twenty-eight or 22.3 per cent were dead, presumably as a result of progression of the disease; sixty-seven or 53.1 per cent had developed remissions to such an extent that fifty-two were able to resume either previous occupations or a modified form of self-sustenance; unimproved and progressively deteriorating were thirty-seven cases or 28.6 per cent. Of this number twenty-one had to be institutionalized. Wile observed as did O'Leary that those patients presenting the least deterioriation at the outset were more markedly benefited than those in whom the deterioration was great. Wile reported eleven paretic cases or six per cent of deaths following malaria inoculation, but of all cases treated with malaria there were sixteen or 3.3 per cent deaths.

Dreyer's[14] findings showed that 33 per cent of paretic patients died before they completed two years of treatment. He also feels that patients above fifty years of age usually offer a poor prognosis. He also claims that tryparsamide and heavy metals plus some form of artificial fever is the treatment of choice. Optic atrophy is not a contraindication to tryparsamide therapy. His figures showed 38 per cent of one hundred and four cases of paresis recovered from psychosis after two years of treatment with tryparsamide, heavy metals, and fever.

Langsam[15] feels that most patients that receive malaria become chronic hospital cases with a physical but not a psychiatric remission. His impression was that malaria treatment has not proved to be as efficacious as it was assumed to be and that it has increased the hospital stay of those who prior to the malarial treatment would have had much shorter expectancy. In the spite of the above ideas he summarizes by saying that even with its dangers and results as shown in his paper, it is well worth continuing with malaria for the results it does effect in some of the cases.

McIntyre says that malaria followed by chemotherapy is the method of choice in treatment of neurosyphilis. He does not believe that heat alone is responsible for remissions, saying that if this were so all that would be required would be two or three heat exposures in the radiotherm or electric blanket, because in three such exposures the patient is exposed to more heat than in a course of malaria consisting of twelve chills. McIntyre also believes that malaria may arrest the pathological process of paresis as far as the ravages of neurosyphilis are concerned, although a psychiatric recovery may not occur. He states that such cases may live as long as fourteen years with a physical, but not a psychiatric cure. He stresses the idea that malaria is important in the treatment of paresis.

Neyman claims that temperatures by electropyrexia at 41° C. (105.8° F.) and above, maintained for at least two hours kill most of treponemata pallide in the human body. He feels that it is the fever itself that kills the organisms.

Neyman in another paper made a thorough review of the treatment of paresis by electropyrexia. He believes that electropyrexia is the treatment of choice. He stresses the extremely low death rate and the large number of patients who attain remissions or show improvement. He compares the treatment of paresis by saying that diathermy is superior to malaria. He reports remissions of 22 per cent with malaria as against 24 per cent with diathermy; partial remissions of 22 per cent with malaria as against 26 per cent by diathermy; arrested cases 26 per cent with malaria, 30 per cent with diathermy. From these figures there doesn't seem to be much choice between diathermy and malaria. Neyman's strongest argument in favor of electropyrexia is the comparable death rates. Of a total of nine hundred and seventy-five patients, 27 per cent are accredited with a complete remission, while three hundred and fifty-four, 36 per cent, are reported as improved and are now said to be no longer in need of hospitalization. Twenty-two have died as a direct result of treatment. This is approximately 2 per cent. Neyman goes on to state that the death rate attributed to malaria therapy, unless a very critical selection of patients is made before treatment is instituted varies between 10 and 30 per cent.

Neyman agrees that all forms of therapy should be followed by courses of tryparsamide combined with bismuth or mercury.

Schiller[16] in his paper summarizes the treatment of seven hundred and twenty-two cases. The types of fever therapy used were malaria, typhoid, and sulphur in oil. All patients received tryparsamide. His summary stated that malaria is still the treatment of choice at the Elgin State Hospital.

As mentioned before the routine treatment at the Pontiac State Hospital for the past fifteen years has been the same. The patient first receives malaria. We have used the indirect method with Plasmodium Vivax. From 4 to 6 cc. of blood is withdrawn from a patient suffering from tertian malaria. If this blood had to be kept for any period of time it would be diluted with sodium citrate solution but this is an infrequent procedure. Usually the blood is taken directly from the donor and injected immediately intravenously into the recipient. It has been noticed that about five to ten days after the inoculation the patient has a rise in temperature to 104° F. or 105° F. and then after a few hours drops back to normal. Usually a marked chill is associated with the elevation of temperature but it has been noticed that often the chill is not present. Once the hyperpyrexia starts the patient is allowed to have a course of fever until he has had at least fifty hours at 103° F. or over. Many authors advocate that the treatment with malaria should be continued until the patient has had a certain number of chills usually stated as eight to twelve. Our experience has been that it is almost impossible to calculate on this basis for often the patient does not complain of having a chill. On occasions when the patients were able to recognize their chills a period of fifty hours of fever over 103° F. usually showed from eight to twelve paroxysms. After the patient had the prescribed fifty hours of malaria treatment he was aborted with quinine sulphate gr. V or X T. I. D. for ten days.

During the fever therapy we followed a routine procedure for the case of the patient. When the temperature is below 99° F. the temperature, pulse, and respiration are recorded every three hours. As soon as the temperature reaches the 99° F., the temperature, pulse, and respirations are recorded every hour

until they return to normal. Blood pressure is taken daily and preferably during a period when the temperature is normal. A complete blood count is taken before inoculation with malaria and repeated every four days while patient is having his reaction. Patient is also watched for any other signs of shock. Particular care is taken to make sure that the patient's diet is sufficient during fever therapy. A high caloric liquid diet is usually ordered.

If the malaria was not aborted with quinine sulphate gr. V X T. I. D. we resorted to 2 cc. of one per cent solution of urea and quinine hydrochloride given intravenously or neoarsphenamine grams .45 intravenously.

Although malaria may be used with a certain sense of security providing it has not been given to patients who show definite contraindications, it must be remembered that there are conditions under which malaria should be aborted. These are listed by Strecker and Ebaugh.[17]

1) Continued hyperpyrexia—refractory to sponging, etc.

2) Shock—extreme exhaustion between chills, foreshadowed as a rule by extreme restlessness and insomnia, rapidly falling blood pressure, etc.

3) Convulsive seizures—particularly when generalized.

4) Tabetic crisis—lightening pains, etc.

5) Rising urea nitrogen in the blood.

6) Hemorrhage—from mucous membranes or in skin (purpura).

7) Jaundice—not to be confused with icterus due to anemia.

8) Cellulitis—developing about abrasions, bed sores, etc.

9) Bronchopneumonia.

10) Acute splenitis—large, firm, and tender spleen.

11) Cardiac decompensation—characterized by thready pulse, cyanosis.

12) Severe anemia—hemoglobin below 40, red count below 12 million, marked leukopenia.

13) Sudden overwhelming increase in parasites in blood.

14) Stupor between chills.

Our experience has shown that the most common causes for aborting the malaria are shock, splenitis, jaundice, and cardiac decompensation. We also follow the rule of not using malaria if the patient shows signs of severe cardio-renal disease, active tuberculosis, severe visceral disease or had many apoplectiform attacks.

About two weeks after the patient has had a successful course of malaria hyperpyrexia we start weekly intravenous injections of 3 grams of tryparsamide for fourteen weeks. Routine ophthalmoscopic examination always precedes a course of tryparsamide therapy. If patient does not have an optic neuritis he is given the tryparsamide.

After fourteen injections of tryparsamide the patient is given fourteen weekly injections of bismuth. Following this, potassium iodide is given orally three times a day for fourteen weeks. The chemotherapy of tryparsamide, bismuth and potassium iodide are alternated each fourteen weeks for a period of three years.

Summary of treatment used at the Pontiac State Hospital:

1) Malaria—4 to 6 cc. tertian malaria blood intravenously. Fifty hours of fever therapy at 103° F. or over.

2) Tryparsamide grams 3—weekly injections intravenously for fourteen weeks. Ophthalmoscopic examination precedes each course of tryparsamide.

3) Bismuth—weekly injectious intramuscularly for fourteen weeks.

4) Potassium iodide given orally T. I. D. for fourteen weeks. The chemotherapy portion of this procedure is repeated for three years.

During the period of 1926-1941 two hundred and fifty-three patients admitted to the Pontiac State Hospital were diagnosed general paralysis of the insane. Of this number Table I shows the greatest percentage of admission were between the ages 30-39 and 40-49 which had respectively 89 cases or 35.57 per cent and 82 cases or 32.41 per cent, a total between

TABLE I

AGE ON ADMISSION

Age	18	20-30	30-39	40-49	50-59	60-69	71
No.	1	19	89	82	45	16	1
%	0.39	7.5	35.57	32.41	17.7	6.34	0.39

these two ages of about 67 per cent. From 20-29 years, 19 or 7.5 per cent; 50-59 years, 45 or 17.7 per cent and 60-69 years, 16 or 6.32 per cent.

Table II summarizes the results of all the cases that received full course of malaria of fifty hours or more, of fever 103° F. or higher, and three years of chemotherapy as described in the first part of this paper. This statement is particularly true of all cases that remained in the hospital and were not paroled. Of those paroled some did not receive a full course of chemotherapy. Ninety-three or 47.21 per cent showed no improvement, fifty-five or 27.91 per cent showed hospital improvement, thirty-nine or 19.79 per cent were paroled and making a good adjustment. Ten or 5.07 per cent died due to the malaria. In order to clarify these groupings it may be advisable to define them more in detail. Patients that are described as having showed no improvement are those who cannot make any adjustment in the hospital. They are confined, must be supervised constantly, and cannot help even with the routine work. Those described as having made a hospital adjustment still need some supervision, but are out on the working parties or help with the work around the hospital. These patients are still not well enough to be out in society. Patients described as being paroled are out in society and making a satisfactory adjustment. The cases listed as dead due to malaria are those whose deaths occurred within six months after patient had been inoculated. This time was taken arbitrarily in order to give a conservative estimate of deaths due to malaria. Even with this method of computing deaths due to malaria only 5.07 per cent died.

Tables III, IV, V and VI further divide the results of cases treated. These tables are divided into the age on admission, whether or not they received malaria, the cases that received malaria but had to be aborted and those that received malaria but showed no reaction.

TABLE II

RESULTS OF COMPLETE MALARIA THERAPY COMBINED WITH CHEMOTHERAPY

	No Improvement	*Hospital Improvement*	*Paroled, Good Adjustment*	*Dead, No. rel. to Malaria*	*Dead Due to Malaria*
No.	93	55	39	20	10
Per cent	47.21	27.91	19.79	10.15	5.07

TABLE III

RESULTS OF 29 PATIENTS WHO DID NOT RECEIVE MALARIA

Age	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*	*71*	*Total*
No. Hosp. Imp.	0	4	6	6	8	1	25
Hosp. Imp.	0	1	2	0	0	0	3
Paroled	0	0	0	1	0	0	1
Dead	0	3	2	5	7	0	17

Table III is a summary of twenty-nine patients who did not receive malaria because they manifested at least one of the contraindications to malaria listed in the beginning of this paper. These patients, however, did receive the routine treatment of chemotherapy. The results of this table are just about what one would expect. No patients in age 20-29 showed any contraindication to malaria and of the total twenty-nine cases listed seventeen or over 58 per cent are now dead. Only three or 10 per cent of these cases showed hospital improvement and one or 3 per cent was paroled.

Table IV summarizes the results of one hundred ninety-six patients who received both pyretotherapy and chemotherapy. Here again the results have been separated into age on admission, and interestingly enough, some possible prognostic factors present themselves.

First, the percentage of patients who will remain in the hospital and not show any improvement varies very little in all age groups. It is poorest over the age of sixty but anyone forty or over doesn't have much more than a fifty per cent chance of showing any improvement.

Second, the patients who showed hospital improvement were low in ages, between 20-29, only two or 13.33 per cent. No patient over sixty showed hospital improvement. Between the ages of thirty to sixty the percentages were approximately the same. It is interesting to note that after adding together in each age group the number of patients who had

to remain hospitalized the percentages of all age groups were practically the same, 66.66 per cent, 71.99 per cent, 75.26 per cent, 79.99 per cent, and 71.42 per cent, respectively.

Third, the table shows that the younger the patient the better the prognosis for parole. The greatest number paroled are between the ages 20-39; the highest 20-29, 33.33 per cent; and next 30-39, 24 per cent.

Fourth, the death rate due to malaria increases with increase in age. No patient between 20-29 years old died due to malaria and the incidence of death increased progressively from 4 per cent between 30-39 to 14.28 per cent between 60-69.

Fifth, the percentage of deaths in the group that died six months or longer after malaria inoculation increased as the age of the patient increased. Figures recorded are from 20-29, 13.33 per cent; 30-39, 10.25 per cent; 40-49, 16.6 per cent; 50-69, 20 per cent, and 60-69, 28.28 per cent.

One of the most interesting observations made while compiling this material was the fact that every patient regardless of his age or condition on admission who showed hospital improvement or eventually was paroled had a note recorded in the history sometime between inoculation of the malaria and six months after course of fever stating that the patient had shown marked improvement. In contrast to this there wasn't one patient who did not show improvement during this six months period that was classified as having shown hospital improvement or parole. The question that comes to mind is, would we be justified in stopping treatment and save all the time and expense treatment entails on these patients who do not show improvement six months after malaria inoculation. The greatest percentage of patients to improve, showed improvement in three months or less after starting malaria treatment.

Table V summarizes the results of eight patients who had malaria and whose hyperpyrexia had to be terminated because they manifested one or more of the indications for abortion. The results of patients forty or over was uniformly poor. Not one patient showed improvement. Between ages thirty and thirty-nine three patients were aborted and one was paroled, one showed hospital improvement, one showed no improvement. No patients between 20-29 years of age had to be aborted.

TABLE V

RESULTS OF 8 PATIENTS WHO HAD MALARIA BUT HAD TO BE ABORTED; RECEIVED CHEMOTHERAPY

Age	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*
No Hosp. Imp.	0	1 33.33%	2 100%	2 100%	1 100%
Hosp. Imp.	0	1 33.33%	0	0	0
Paroled	0	1 33.33%	0	0	0

TABLE VI

RESULTS OF 17 PATIENTS. HAD MALARIA WITH NO REACTION. RECEIVED CHEMOTHERAPY

Age	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*
No Imp.	1	6	6	0	0
Imp.	1	0	0	1	0
Paroled	2	0	0	0	0

TABLE IV

RESULTS OF 199 PATIENTS TREATED WITH MALARIA AND CHEMOTHERAPY

Age	*18*	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*
No Hosp. Imp.	0	8 53.33%	28 37.33%	36 54.54%	17 48.57%	5 71.42%
Hosp. Imp.	1	1 13.33%	26 34.66%	17 25.72%	11 31.42%	0
Paroled	0	5 33.33%	18 24%	10 15.15%	4 11.41%	1 14.28%
Dead due to mal.	0	0	3 4%	3 4.54%	3 8.57%	1 14.28%
Dead	0	2 13.33%	8 10.25%	11 16.6%	7 20%	2 28.28%

In table VI seventeen patients received malaria but had no reaction. Thirteen of the seventeen showed no improvement. Two showed hospital treatment and two were paroled. Both patients paroled were between twenty and twenty-nine years of age. An interesting observation of the group who did not react to malaria was that eleven were colored. This is in accordance with the findings of other authors who have noticed that most colored people are immune to tertian malaria. Within the last three months four colored people have been inoculated with quartan malaria and all have had a complete reaction.

In 1936 Dr. P. V. Wagley made a review of all the cases of general paralysis in the Pontiac State Hospital between the dates of July 1, 1919, and June 30, 1926. There was a total of three hundred and sixty-one cases. These cases did not receive malaria. They were given what we refer to as the old type of treatment which consisted of mercury rubs, neoarsphenamine and potassium iodide. No definite routine was used during that period. The following is a resumé of Dr. Wagley's findings:

Total number of cases	361
Paroled good adjustment	0.3%
Hospital improvement	15 %
Total unimproved	85 %
Dead at end of period up to 1936	76 %

The cases treated between 1926-1940 compared with those of 1919-1926 show the following:

	1919-1926	*1926-1940*
Total number	361	253
Paroled	0.3%	17%
Hospital improvement	15.0%	24%
Total unimproved	85.0%	69%
Dead at end of period	76.0%	22%

The comparison of these two tables shows a definite value for the type of treatment now used at the Pontiac State Hospital.

While reviewing the literature I noted that there was practically nothing written about the possible relationship of alcohol to general paralysis of the insane. The two points I was particularly interested in were first, do people who are alcoholic have a greater susceptibility to paresis than those that are not alcoholic; second, what part does alcohol play in the prognosis.

The answer to the first question according to the cases studied in this paper (Table VII) reveals the following results: Ninety-four or 37 per cent of the cases give a definite history of being habitual drinkers. These are the patients described as always drunk, chronic drinkers who never knew when to stop. Fifty-

TABLE VII

	Number	*No Hospital Improvement*	*Hospital Improvement*	*Paroled*
Alcoholic	94 37%	52 55.32%	26 27.66%	16 17.02%
Moderately Alcoholic	53 21%	32 60.37%	15 28.31%	6 11.32%
Non-Alcoholic	105 42%	56 53.33%	23 21.9 %	26 24.75%

three or 21 per cent were moderate or social drinkers. These people were described as taking a drink occasionally but never drinking to excess. One hundred and five or 42 per cent gave a history of no drinking or informant didn't know whether patient drank. All cases that gave no history as to the alcoholic tendencies of the patient were put in this last group. The reason for doing this will be discussed later. In this type of study I do not believe the differences noted above are sufficient to make any definite statement as to whether alcoholics have a greater disposition than the non-alcoholics towards contracting paresis.

The answer to the second question, what part does alcohol play in the prognosis was more difficult to determine. All cases were again classified as alcoholic, moderately alcoholic and non-alcoholic. As explained before the non-alcoholic were those patients whose history said patient did not drink, family or friends didn't know whether or not they drank, and also those that did not mention whether patient drank. This was done for the purpose of being ultra conservative in showing any tendency that alcoholics may have. In other words, by this classification we can be confident that any prognostic trend the alcoholic patients show should be a conservative one.

Continuing with Table VII we notice that the total number of alcoholics admitted was ninety-four. Twenty-six (27.66%) showed

hospital improvement; sixteen (17.02%) were paroled and fifty-two (55.32%) showed no improvement. Fifty-three were moderately alcoholic. Of these fifteen (28.37%) showed hospital improvement; six (11.32%) were paroled and thirty-two (60.37%) showed no improvement. Comparison of alcoholics with the moderate alcoholics showed no definite evidence for prognostication. There wasn't any definite swing in either direction.

Of the non-alcoholics one hundred and five were admitted; twenty-three (21.9%) showed hospital improvement; twenty-six (24.35%) were paroled and fifty-six (53.33%) showed no improvement. On the other hand comparing the non-alcoholics with the alcoholics showed some difference. There is a suggestion that the non-alcoholics' prognosis is better than the alcoholics'. About 8 per cent more of the non-alcoholics were paroled.

TABLE VIII

	Number	*Paroled*
Alcoholics and Moderate	147	22 14.96%
Non-Alcoholic	105	26 24.75%

TABLE IX

	Number	*Paroled*
Alcoholics	94	16 17.02%
Moderate Alcoholics and Non-Alcoholics	158	32 20.35%

Combining the alcoholics with the moderate alcoholics, as in Table VIII, 14.96 per cent of cases were paroled whereas with non-alcoholics 24.75 per cent were paroled. This would lead one to surmise that the chances of being paroled were greater with the non-alcoholics.

Combining the moderate alcoholic with the non-alcoholic and comparing this combination with the alcoholic Table IX reveals that the combination of the moderate alcoholic and non-alcoholic had 20.35% paroled against 17.02% paroled for the alcoholic. Although difference here is not great the tendency is still in favor of the non-alcoholic.

Breaking down Chart VII, it was noticed that in certain age groups the presence or absence of alcohol might be of some prognostic significance.

Table X shows that the non-alcoholic had best prognosis for parole in almost all age groups. The only exception was between 30-39.

Table XI added the non-alcoholics with the moderate alcoholics and compared the prognosis of this group with the cases known to be real alcoholics and described as habitual drinkers by their families. This combination is an ultra-conservative estimate of alcohol as a prognostic value. This table points out that the alcoholic shows the poorest prognosis in all age groups except 30-39. I have not been able to determine any reason for the age group 30-39 to differ from the other age groups.

Table XII combines the moderate alcoholic with the alcoholic and compares this combination with the non-alcoholic. This table shows that regardless of the age group all non-alcoholics had a better prognosis than the combination of alcoholics and moderate alcoholics.

It might be pointed out that we have evidence to show that the presence or absence of alcohol did not seem to make any appreciable difference in trying to determine the chances of the patient making a hospital adjustment.

Realizing that the histories studied did not inquire into the alcoholic history as thoroughly as may be desired for such a study and also recognizing the definite trend for non-alcoholics to have the best prognosis, I believe further studies of this type are in order to further substantiate or disprove the fact.

Summary

1) The results of two hundred and fifty-three cases of general paralysis of the insane were reviewed.

2) A routine type of therapy was used in all cases.

3) Patients who received malaria and chemotherapy during period 1926-1941 had better prognosis than those who received only chemotherapy during period 1919-1926.

4) Of patients who received both chemotherapy and pyretotherapy best prognosis for parole was between ages 20-29 and 30-39.

5) Death rate due to malaria increases as age increases. Average death rate 5.07 per cent.

6) All patients who were paroled or classified as improved in hospital showed improvement within a six month period after malaria inoculation. No one was paroled or showed hospital improvement without showing improvement during this period.

7) Most colored people do not react to the tertian type of malaria.

8) There is no appreciable difference in percentage of alcoholics and non-alcoholics admitted to hospital with diagnosis of general paralysis.

9) There is a tendency for non-alcoholics to have a better prognosis than alcoholics.

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TABLE X

PAROLE

Age	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*
Alcoholic	1 16.66%	12 31.57%	1 3.44%	2 14.28%	0 0 %
Moderately Alcoholic	1 33.33%	1 5 %	3 15.78%	0 0 %	1 50 %
Non-Alcoholic	5 55.55%	9 27.27%	6 18.18%	5 22.72%	1 14.28%

TABLE XI

	20-29	*30-39*	*40-49*	*50-59*	*60-69*
Only Alcoholics of Definite History	Patients 6 Paroled 1 16.66%	38 12 31.5 %	29 1 3.44%	14 2 14.28%	Patients 7 Paroled 0 0%
Moderate Alcoholics and Non-Alcoholics	Patients 12 Paroled 6 50%	53 10 18.86%	52 9 17.30%	31 5 16.12%	Patients 9 Paroled 2 22.22%

TABLE XII

	20-29	*30-39*	*40-49*	*50-59*	*60-69*
Alcoholic and Moderate Alcoholic	Patients 9 Paroled 2 24.9%	58 13 22.41%	48 4 8.3 %	23 2 8.7 %	Patients 9 Paroled 1 11.1%
Non-Alcoholic	Patients 9 Paroled 5 55.55%	33 9 27.27%	33 6 18.18%	22 5 22.72%	Patients 7 Paroled 1 14.28%

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Russian Psychological Warfare*

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To understand the colossal task of the Russian leaders in the last 25 years one must be able to envisage the raw material with which they worked. Here lay a great country with limitless undeveloped natural resources, lacking tools and the knowledge with which to explore its own wealth. Here were 165 million people, millions unschooled, many more millions illiterate. A babble of tongues barred mutual understanding. Vast reaches of land without communication or transportation separated these people from their leaders. Three hundred years of history—the cruelty of an autocratic government riding with a whip across the centuries, fomented fear, blinding men to their own welfare, military units developing torture into a fine art, owners of the land enslaving their tenants, factory employers beating and starving their workers; men and women giving their last ruble upon the altar in fear of the wrath of the priests who used God as a threat. Intellectuals whispered in the underground movement, or died for their ideals in Siberia. Teachers were afraid to talk, while the government feared they would anyway. This picture in bright and discordant colors swept across the mural that was Russia in 1917. It was comparatively easy for a tightly controlled organization with a definite plan of social reforms to stir the imagination of masses with their slogans: Peace and Bread; Land and Freedom. Though the armies were disorganized, it was possible for the young Soviet government to resist the interventionist countries, as well as to crush the counter-revolution, so that by 1922 peace was restored.

At first, Lenin, and after his death in 1924, Stalin, were fully aware that in order to build a socialist republic surrounded by capitalist countries, the entire country had to be revolutionized. Stalin and members of his cabinet had in mind at all times the possibility of an attack from an outside source. Their rapid industrialization and reforms in the field of agriculture (collective farming) were all aimed at building a strong Russia which would be independent of any other country and would be able to carry out the plan of conversion into a communist state. One is justified, therefore, in saying that Soviet Russia was geared for a defensive war ever since its formation in October of 1917.

In order to build up a self-sufficient state, the Soviet leaders concentrated on the development of two strong forces—the worker and the farmer. In the period of transition from an agrarian country to an industrial one, some 30 to 40 per cent of the farmers were turned into industrial workers. This internal policy was achieved by mass education and mass propaganda.

Mass education was directed toward literacy, sanitation and health, as well as toward propagation of the virtues of the Socialist State. Simple posters, graphic primers, village reading rooms, plays, propaganda movies, local newspapers and radios, mass printing of popular books (both Russian and foreign, in translation), factory clubs were utilized, and professional propagandists were sent far and wide to reach the most remote peasantry. All ex-

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(Author's Note: This article constitutes a review and compilation of source material culled from the authors listed at the end of this paper, and may be considered a review of the current literature on the subject.)

traneous influence was banned. Interest was directed to one end, i.e., teaching the worker his part in this new world. A possible 40 per cent illiteracy at the time of the Revolution dropped to a meager 5 to 10 per cent in 1940. Statistics for 1940 report the publication of 65,928 articles of a scientific, economic, and sociologic nature. During one week in November of 1940, picked at random, there were 297 articles published on health and medicine alone. Unfortunately, I have no figures for comparison, but I am certain that the figures of the pre-Revolution days were comparatively small.

Importation of foreign technological experts was, in a sense, an educational measure which later, however, turned out to be of propaganda value, when many of these units from Germany (the Shachtinsky trial), England (Metro-Vickers), France and Poland (Industrial Party), were tried publicly and charged with espionage and willful wrecking of Soviet industry. There is no doubt that these trials served the three-fold purpose of shaking off lethargy, of reminding the Russian people that their position was not as secure as it might seem, and that trouble might come from any one of these sources.

Mass propaganda at home was always aimed at instilling devotion, faith and hope in the ultimate triumph of the Soviet system. For this purpose bonafide members of the Communist Party, whose number in the early years was never over 250,000, were given the task of spreading the gospel of Communism as well as training lecturers to carry on the work. Practically every organ published articles which had but one color—red. There was simultaneous propaganda in the factories and on the farms: the deification of Lenin and Stalin, the atheistic movement, the Komsomols-youth organizations, the traditional May First celebrations, the museums of art and culture, the parks of culture, the wiping out of prostitution popularized abroad, the creches, the resorts for workers' vacations, the trials, the slogans, the collectivization of farms, the three Five-Year Plans, and finally, the Stakanovich movement—every man according to his ability, a speed-up system of production initiated among the workers with financial incentive behind it. When the propaganda which aimed at developing a clear understanding of the principles of Communism among the populace progressed too slowly, the Communist Party brought out a short course on "The History of the Communist Party of the Soviet Union" which proved to be of incalculable propaganda value. Nor was propaganda limited to the boundaries of the country. Though Stalin disclaimed interest in international socialism, he recognized, however, the value of foreign spokesmen and of party sympathizers abroad.

This preparation of the state for the ultimate day when Russia would be called on to fight it out with an aggressor, whoever he might be, should be looked on as psychological warfare, for it is inconceivable that Russia, a country of some 175 different nationalities, could be transformed into such a homogeneous and spontaneous mass with an enthusiasm that is practically unequalled, if it weren't for the fact that a great deal of effort and thought were given to the preparation of the country for "Der Tag." The various nationalities within the Soviet Union were encouraged to preserve their language and traditions, a clever and discerning attitude on the part of Stalin and his associates who recognized that common ideals constitute a stronger amalgam than enforced homogeneity.

The danger of attack against the Soviet Union was impressed on the Russian people. In March, 1940, the Propaganda Office declared that the aim of the Communist leadership should be "directed toward the creation of a military might of the State, education toward patriotism, and moral and political union of the Soviet society." About the same time the official journal called "Propagandist" defined the functions of a propagandist as follows: (1) To explain the true facts of conditions, and (2) To build an iron discipline and loyalty of Russians toward their motherland. Thus, according to Berchin and Ben-Horin, "an atmosphere was created which made every citizen believe in the importance of the part he personally played in the State; every man lived and worked in the firm belief that he was building the Socialist State, and every Red Army soldier, that he was responsible for the defense of the country."

At no time have the Russians underestimated Hitler, and for a good many years they have looked on him as their real enemy. In a sense they have been preparing themselves psychologically through the medium of the

press, the theater and the lecture platform for a war to the finish. The following is a sample of propaganda in one of the largest armament factories during the war, which was conducted by the Party committee, collective agitators and specially assigned men:

1) The present moment of the great patriotic war, and our duties.

2) Iron discipline, stamina and defiance—clues to victory.

3) The German Fascist Party—murderers and robbers.

4) Hate and unmerciful destruction of the Fascist brute.

5) The growth and might of the organized Red Army in the battle with the German Fascist hordes.

6) Love for the motherland and heroism—traditions of the Russian people.

7) The mastery of the art of war—the first duty of each Soviet patriot.

8) Revolutionary watchfulness is the law during this war.

9) Lenin and Stalin on German imperialism.

10) The party of Lenin and Stalin—the organizer of the fight against the German Fascist clique.

11) The Soviet Union is fighting not only to defeat the German army, but to destroy the hateful system of which the army was a mere instrument.

The propaganda for home morale ran along these lines: "From this war depends the life of the people, the preservation of the culture, the homes, the lives of our fathers, mothers, brothers, sisters, wives and children. Life and freedom—or shameful serfdom and death of 200 million people. Self-sacrifice, noble fight to the last breath for the health and happiness of our country—or death of the government, the people and the homes." As Captain Sefanoff in the play "The Russian People" by Konstantin Simonov, says:

"I want to live very badly, to live long, to live till that time when I see the last German dead, the very last one, and a dead one, right here, right under my very own feet."

To quote Berchin and Ben-Horin, "The most striking characteristic of the psychologic concept of war is the emphasis laid on the combatants' will to win, on the determination of the soldiers to spare no sacrifice to defeat the enemy. Such determination can spring only from the combined force of patriotic and revolutionary sentiments which are carefully fostered and stimulated by the Soviet government. In the eyes of some political leaders, this faith and enthusiasm on the part of the Red soldiers are as great a factor in the power of the Red Army as are its technical equipment and military skill. Or, as one leading Russian newspaper, Izvestia, says, 'The strength of the Red Army lies not only in its numbers, or its mighty technique, but in the fact that the Army's flesh is from the people's flesh, blood from the peoples' blood.'" As a fact, all the Russian newspapers devote practically the entire space to war and acts of heroism. This method helps to strengthen the affection of the people for the Red Army, and sets an example for the civilian population to emulate.

Osoaviakhim. According to Berchin and Ben-Horin, the art and science of war were made the everyday business of Russian workers, peasants, students and civilians. Osoaviakhim—Oso (Association for Assistance and Defense) was merged with Aviakhim (Association for Assistance in Aviation and Chemistry)—was called on to play the leading part in the mobilization of Russia's civilian population. In 1929 it numbered over five million members of which only some 300,000 were military men. The same year Osoaviakhim had about 27,000 organized groups for the study of military science, 15,000 groups studying the art of hand grenade, 4,000 shooting galleries, 1,000 special women's circles for communication service, 2,000 for air and chemical defense, etc. Even special badges, symbolizing all-around fitness, were given out to the deserving ones. It is estimated that by 1940 the strength of this civilian army was close to 15 million. From this we see that not only patriotism but special knowledge account for the united effort of the masses of the Russians in the defense of their cities. Thanks to the Osoaviakhim, knowledge of military tactics was general.

According to Strong, the Osoaviakhim was not exposed to such emotional books as "Yellow Peril," or "The Japanese Menace," or "German Imperialism," but, on the contrary, to such technical works as "Field Tactics of the Japanese Army," "Tanks," "Proposed System of Artillery," etc. A thousand-page textbook entitled "Foreign Armies" described with hundreds of diagrams the organization and

tactics of every important military force in the world. The civilians were also supplied with a popular journal, "War Tactics Abroad," which was made up of articles culled from popular military publications. Of course, this military training of the civilian population made it war-minded.

When Stalin made his famous "Scorched Earth policy" speech ten days after the outbreak of war, and urged the Soviet population to form themselves into guerrilla bands in order to harrass the enemy, he had a mighty nucleus of 15 million men trained in the various arts of warfare. The guerrillas which are not infrequently made up of army detachments either encircled or "deliberately lost" and which usually take to forests and hills in order to harrass the enemy's rear, keep in close touch with the Red Army and quite often synchronize their offensive attacks. These guerrillas are constantly propagandized through the medium of newspapers, leaflets, loud speakers and actual commissar-morale builders.

The Red Army which was formed in 1918, was at first imbued with the Marxist ideology, but soon the psychologic makeup underwent a radical change, especially with the publication of the manual "What a Red Army Man Must Know." Speaking of the Red Army in 1925, Stalin said: "Lenin told us that the strengthening of the Red Army and the betterment of her position is one of our most important tasks. We swear that we will spare no effort to strengthen our Red Army." Three years later, on the tenth anniversary of the Red Army, Stalin spoke again: "The first peculiarity of the Red Army was that it was an army of liberated workers and peasants, the mighty instrument of a proletarian dictatorship; the second peculiarity was that the Red Army was an army of the fraternity of nations, an instrument for the liberation of the subjugated, oppressed peoples, a faithful guardian of liberty and independence; and the third peculiarity, that it had the spirit of internationalism and world solidarity." A clever mixture of nationalism and internationalism. When danger grew real, Moscow emphasized nationalism. Berchin and Ben-Horin reported that by 1941 the army was propagandized through 2,000 clubs and 25 million books and pamphlets.

The story of the Red Army would not be complete without a word about the military commissars, who were the morale officers and representatives of the Communist Party in the armed forces. The principal job of the commissar was to develop patriotism and fighting spirit among officers and men. The system was originally introduced by decree in 1918, abolished in July of 1940, and reinstated a year later. The system was again abolished in October of 1942, largely because the high command felt that the morale of the Red Army was unshakable. The system of commissars had a definite and distinct value to the Red Army, for it inculcated a class consciousness, and it trained the commissars in the art of warfare, so that now many commissars actually lead Red Army units and have proved themselves capable strategists.

The results of the propaganda may be noted in the following description of a beleaguered city taken from "The USSR at War."

"Six thousand cannon, 4500 trench mortars, a thousand planes, 1900 machine guns, backed up by 800 thousand troops were thrown against Leningrad in August of 1941. Workers dropped their tools in factories and took up rifles, while women and children replaced the workers at the bench. By September 8, four weeks after the initial siege, the railroads, the canal system, the deep water port, and the highways, which were built to supply its 3 million people and its industries, were cut off, except for a water route across Lake Ladoga. When the lake froze, a road was built across the ice, and this road kept the city alive. Rations were cut to the bone, and people lived on four ounces of bread and nothing else for many months, and in unheated quarters. Despite these incredible hardships, life went on, and some 20 thousand shows were given during the winter of 1941 inside Leningrad to the tune of German bombs, and they even had time to publish 100,000 copies of Tolstoy's 'War and Peace.'"

But this is much more eloquently expressed in music by Shostokovich in his now-famous Seventh Symphony.

The military propaganda against the enemy is directed primarily toward disrupting the morale of the armed forces, as well as of the civilian population. From a great many of the 150 powerful transmitters in Russia, propaganda is directed toward Germany. As quoted by Strong:

"Frau Kraemer, it is with deep regret that I have to inform you that your husband, Ludwig Kraemer, of the 116th Infantry Regiment, was mortally wounded. It happened as follows—Soviet troops repelled a German attack. The German regiment withdrew, leaving behind more than a thousand dead and wounded. Your husband was found with wounds in his lungs. He was rushed to hospital where he died.

"Frau Kraemer, we are asking you: What was your husband doing on Soviet soil? He was a locksmith, and contented with his work. From the papers he left we know that he was a good soldier; he took part in campaigns in Poland, France and the Balkans and was decorated with the Iron Cross.

"Frau Kraemer, we know that he was also a good husband—he died with a photograph of you and your two children in his hand. In a few days the Nazi authorities will inform you that he died in his country's honor. We are asking you, Frau Kraemer: Is it honorable to break into a foreign land under cover of darkness? Is it honorable to bring destruction and death upon other people?"

Besides such individual appeals, this line of propaganda also consists of broadcasting daily lists of German casualties. The other line of propaganda is primarily directed towards reassuring the German people that the Russians aim only at the destruction of the Hitlerite regime, and have no ill feelings toward the German people. Aside from the above methods, demoralization of the enemy is intensified by propaganda of the people in the rear, the enemy army proper, and the captive soldiers. The people in the rear are left, not infrequently, with the purpose of either forming guerrilla bands, acting as spies and informers, or demoralizing the army by dropping leaflets, setting up loud speakers, loud talking from trenches, banners in trenches, or the World War I trick—brotherly love. The enemy army is demoralized by stories of victories, discussions of causes and principles, division of the populace and implantation of new social ideas. Finally, the captive soldiers are indoctrinated and not infrequently asked to broadcast to their homeland.

Thus we see a widely divided country welded into one piece by the heat of its beliefs and its patriotism. We see a grim war psychology emerge from the early frustrations and fears of the masses; we see a directed and concerted purpose emerge from a chaotic period of revolution.

I make free to paraphrase for its moral, Olgin's rendition of Garshin's famous story of the crimson flower. This is the story of a flower and an insane man who admired it through the windows of an asylum. To him the flower is of deep significance, it is evil incarnate, "it has gathered all the blood of innocent victims, all the tears, all the misery of mankind; it is a mysterious dreadful being, the antithesis of God, Ahriman in an innocent shape."

The man decides to pluck the flower, to kill it, and thus kill evil. It is a hard task, the window bars are strong, the guards are cunning. Moreover, he knows that after plucking the flower he will have to hide it on his breast, lest it shed its poison into the world with its last breath. He knows he must die, but this gives him superhuman courage and strength. "The evil will permeate his very heart, his soul. It will be conquered there or else he will die as the foremost fighter of mankind who first dared to challenge all the evil of the world at once." The man undertakes the heroic deed. He has to do it alone—because nobody sees the meaning of the flower, nobody cares. In anguish he exclaims, "Why do they not see it? I do. Can I go on living?" The cry, "Why do they not see it?" is the cry for a second front. The flower is the black swastika.

6 N. Michigan Ave.

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Book Reviews

FUNDAMENTALS OF PSYCHIATRY, by Edward A. Strecker, Phila., 1942, Lippincott, pp. ix, 201.

This little book is the answer to the average doctor's rather impatient query: What is psychiatry about anyway? It is dedicated to "all those physicians whether in the armed forces, or in civilian life, who are taking advantage of the opportunity to render neuropsychiatric service, whenever and wherever it is needed." Were it not for evidence of a certain hastiness in writing which may well be corrected in subsequent revisions, this volume would stand as a companion piece with Bernard Hart's Psychopathology of Insanity. In this volume psychiatry has finally come down to earth—almost. There are a few passages that reflect traditional teachings, and sometimes it is not quite certain whether the author may not have his tongue in his cheek when he inserts, in quotes: "The super-ego has taken possession of the entire sadism of the individual, rages against the helpless ego that acknowledges its guilt and submits to punishment." For the most part, however, simplicity is the keynote, and while some psychiatrists may inveigh against oversimplification, nevertheless, it makes the book easy to read and its logical deductions easy to apply. The emphasis upon military psychiatry is well-timed, the author having previously prepared for the War Department the brochure on the treatment of military neuropsychiatry disabilities. Above all, the work is practical, and directions for treatment are specific and within the range of the educated physician.

Walter Freeman.

CENTRAL AUTONOMIC REGULATIONS IN HEALTH AND DISEASE, by Heyman R. Miller, M.D.; Introduction by John F. Fulton, M.D.; Grune and Stratton, New York, 1942; 430 pages.

In the preface the author states "The book has been written primarily from the point of view and out of the need of the clinician." The need for such a production is aptly stated in the following excerpt. "An intelligent appraisal of the autonomic functions will make it clear that many patterns of clinical disease are partially or wholly expressions of autonomic activity, and that this activity may or may not be associated with somatic alteration." He further states "The explanation for these reactions and simulations is to be sought in the common patterns of autonomic activities which are set off principally by central levels in the neuraxis." The material is presented in 15 chapters, the first chapter presenting the physiology of the autonomic system and the last 3 chapters describing the anatomy. Chapters II through XII are devoted to a discussion of the autonomic regulation of various body functions; for example Chapter II is entitled "Regulations of Body Temperature," Chapter IV "Central Regulation of Metabolism," Chapter X "Regulation of Sleep-Waking Rhythm," etc. In each chapter there appears an excellent survey of the literature pertaining to the topic of that section. The material is discussed in all its controversial detail but in most instances the reader is left to his own conclusions. The author's illustrative case summaries are usually quite good, although a trifle brief. It is unfortunate that the author did not present his clinical material in more detail and that he so sharply limited the number of cases he presented.

The book presents a most complete bibliography, and contains a discussion of practically all of the recent work on autonomic function. The student or physician will find it a valuable reference text and guide to further reading on the varied phases of the role of the autonomics in disease. The volume is of particular value to those physicians interested in "Psychosomatic Medicine" as it ably describes the control that the cortical and hypothalamic centers exercise over various bodily processes. Without clearly declaring his intention of so doing, the author shows how chronic states of fear or anxiety can produce measurable alterations in body physiology and function.

This book is a valuable contribution to medical literature and can be recommended for every physician and student who wants a survey of the function of the autonomic nervous system in health and disease.

Jack Ewalt, M.D.
Galveston, Texas.

War Conference

The medical, surgical and industrial hygiene experts who are safeguarding the well-being of more than twenty million industrial workers have agreed to pool their knowledge and exchange their experiences in connection with the many new and complex problems of today's wartime production. For this purpose their organizations—The American Association of Industrial Physicians and Surgeons, The American Industrial Hygiene Association, and The National Conference of Governmental Hygienists—are combining their annual meetings in a four-day "War Conference" at Rochester, New York, May 24-27, 1943.

Physicians and surgeons, hygienists, engineers, nurses, executives and all others who are interested in the problems of industrial health and their solution are invited to attend as many of the sessions as they wish. No registration fee is required.

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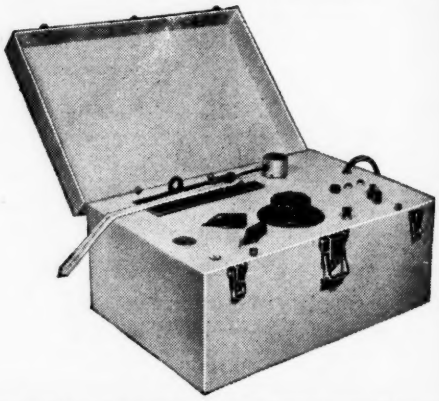

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